

DIE-UP BALL GRID ARRAY PACKAGE WITH A HEAT SPREADER  
AND METHOD FOR MAKING THE SAME

ABSTRACT OF THE DISCLOSURE

An electrically and thermally enhanced die-up tape substrate ball grid array (BGA) package and die-up plastic substrate BGA package are described. A substrate that has a first surface and a second surface is received. A heat spreader has a first surface and a second surface. The first heat spreader surface is attached to the second substrate surface. A plurality of solder balls are attached to the second substrate surface outside an outer dimensional profile of the heat spreader. The second heat spreader surface is configured to be coupled to a printed circuit board (PCB).

A283-96.wpd  
1875.0370000

09/849537